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7/27/93

Office of the Secretary
Federal Communications Commission
Washington, D.C. 20554

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Subject: Notice of Propsed Rulemaking
ET Docket # 93-62
Guidelines for Evaluating the Environmental
Effects of Radiofrequency Radiation

This is in response to the Notice of Proposed Rule Making (NPRM) in the matter of the guidelines for evaluating the environmental effects of Radiofrequency Radiation.

As Dr. Robert Cleveland is aware, our organization is directly involved with the marketing, sales, and distribution of RF Protective Clothing (RFPC), specifically developed for the purpose of providing an extra degree of safety for working in such industries as broadcasting and telecommunications.

It has also been shown that specific testing of the clothing through the Naval Aerospace Medical Research Laboratory, further substantiated by an OSHA response to the FCC request by Dr. Stanley, provides an assuring degree of acceptability for use in the broadcast industry.

Our purpose for responding to the NPRM is to formally state that while this product is available as an additional mitigating measure to the problem of RF exposure, this *in no way* precludes the necessity of proper quantitative measurements of the suspect environment. While the specifications of the *"Naptex"* Protective

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present, it shall be made apparent that even rooftops upon which paging and cellular apparatus are in operation represent an altogether formidable hazard all by themselves. This recently recognized hazard now poses new compliance problems not only to RF personnel, but to ordinary service personnel employed in such capacities as air-conditioning & heating repair, and other commonly encountered building maintenance activities.

We also feel that there is a certain prudence to the opinion that the use of protective clothing not only be for the cases concerning high-field environments, but also as a *standard of practice* while

U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210

Reply to the Attention of:

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APR 14 1993

Mr. Thomas P. Stanley
Chief Engineer
Federal Communications Commission
Washington, D.C. 20554

Dear Mr. Stanley:

This is in response to your letter of November 23, 1992, to Ms. Dorothy L. Strunk, former Acting Assistant Secretary for Occupational Safety and Health Administration (OSHA), requesting an opinion regarding the effectiveness of "NAPTEX" Radiofrequency (RF) Electromagnetic Radiation Protective Clothing. Your letter has been forwarded to the Directorate of Technical Support for response. As you are aware, our response was delayed until additional test results were provided by the manufacturer of this product.

As you know, OSHA does not approve nor endorse products. The variable working conditions at jobsites and possible alterations or misapplication of an otherwise safe product could easily create a hazardous condition beyond the control of the manufacturer. However, we have reviewed the product data provided by the manufacturer and offer the following comments.

Due to problems experienced with the use of previous RF protective clothing, we feel it is necessary that manufacturers address the following characteristics of RFR Protective clothing prior to marketing:

- Material Breakdown Threshold
- Surface Temperature Stability
- "Specific Absorption Rate" Reduction
- Maintainability and Worker Acceptance

The **Material Breakdown Threshold** must be well in excess of the RF induced heating experienced during the intended use of the protective clothing. For this reason, limitations on the use of the clothing must be specified, such as in terms of maximum field

Current ANSI standards for RF exposures include limits expressed in terms of Specific Absorption Rate (SAR). The capability of RF protective clothing to provide **SAR Reduction** will vary significantly with certain RF field characteristics, particularly frequency. Therefore, the actual reduction in SAR must be determined for the specific field conditions of intended use. It is the responsibility of the user to ensure the protective clothing will provide adequate SAR reduction, e.g. to achieve compliance with ANSI C95.1-1992 SAR limits. This determination should be based on both product performance data and an assessment of intended worst-case field exposures.

Regarding the **Maintainability and Worker Acceptance** of the clothing, the material should be able to withstand treatment comparable to standard-issue industry work-clothes. Construction of the clothing should minimize restriction of the wearer's movements and vision.

As with all personal protective equipment, the worker must visibly inspect the protective clothing to ensure it is in good condition. In the event of a rip or tear in the fabric, the performance of the suit could be compromised. Depending on the severity of the tear, the item may require subsequent testing for

The manufacturer currently restricts use of NAPTEX products to field intensities of 20 mW/cm^2 for frequencies up to 60 MHz, and 125 mW/cm^2 for frequencies from 65MHz to 10 GHz. Test data demonstrate that compliance with ANSI is easily achieved when using the products within these limits. It is expected that additional testing currently being conducted by Maxwell will allow for even higher field intensities.

If we can be of further assistance, please do not hesitate to contact me at (202) 219-7031, or Bob Curtis at (801) 487-0521.

Sincerely,

Patricia K. Clark

Patricia K. Clark
Director
Directorate Technical Support